

LATE REPORTS FOR AUGUST, 1934

TEMPERATURE (°C.)

Station	Altitude (meters) m. s. l.																	
	Surface		500		1,000		1,500		2,000		2,500		3,000		4,000		5,000	
	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal
Philadelphia, Pa. ¹ (3 m)-----	20.3	-----	19.6	-----	17.4	-----	14.6	-----	10.8	-----	8.1	-----	5.8	-----	0.2	-----	-6.1	-----
Washington, D. C. ¹ (2 m)-----	18.5	-4.2	18.9	-2.6	17.5	-2.0	15.4	-1.3	12.9	-0.9	10.5	-0.5	8.1	-0.1	2.8	+0.1	-3.8	0.0

RELATIVE HUMIDITY (PERCENT)

Philadelphia, Pa. ¹ (3 m).....	82	—	73	—	66	—	65	—	67	—	60	—	55	—	41	—	35	—
Washington, D. C. ¹ (2 m).....	85	+9	74	+5	73	+8	74	+8	72	+5	66	+3	57	—2	48	—6	47	—5

¹ Navy.

TABLE 2.—Free-air resultant winds (meters per second) based on pilot-balloon observations made near 7 a. m. (E. S. T.) during September 1934

[Wind from N=360°, E=90°, etc.]

Altitude (m) m. s. l.	Albuquerque, N. Mex. (1,554 m)		Atlanta, Ga. (309 m)		Bismarck, N. Dak. (515 m)		Brownsville, Tex. (7 m)		Burlington, Vt. (132 m)		Cheyenne, Wyo. (1,873 m)		Chicago, Ill. (192 m)		Cleveland, Ohio (245 m)		Dallas, Tex. (154 m)		Havre, Mont. (762 m)		Jacksonville, Fla. (14 m)		Key West, Fla. (11 m)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
Surface.....	39	1.2	350	0.6	345	0.9	100	1.2	170	3.0	279	3.0	227	1.2	180	2.4	155	1.9	276	1.1	316	1.3	99	1.9
500.....	3	0.3	3	0.3	143	7.1	143	7.1	190	7.3	238	5.2	222	5.6	192	6.1	222	5.6	192	6.1	45	0.6	102	4.3
1,000.....	248	1.9	248	1.9	264	3.5	160	7.4	222	5.5	243	5.7	249	5.7	203	6.3	272	2.6	79	1.0	107	4.2	107	4.2
1,500.....	235	2.5	277	4.1	161	6.5	239	5.2	239	5.2	248	7.2	243	6.4	214	3.7	282	6.1	66	0.5	113	3.1	113	3.1
2,000.....	229	0.3	242	2.7	286	4.4	160	5.3	250	4.8	277	4.6	256	7.4	237	6.9	249	2.7	292	7.4	84	0.7	128	2.6
2,500.....	272	3.6	242	3.7	287	6.1	150	4.6	237	5.6	291	6.7	253	7.3	238	7.2	285	3.0	284	7.8	122	0.3	122	2.5
3,000.....	271	6.3	245	3.9	284	9.0	138	3.8	238	5.3	292	8.4	248	7.6	239	7.0	325	3.5	288	10.1	198	0.8	137	1.4
4,000.....	273	6.2	244	4.2	296	11.6	126	2.4	225	5.9	293	10.4	245	8.6	245	8.6	312	2.4	288	12.6	222	1.2	54	0.7
5,000.....	269	6.6	240	3.2	—	—	102	0.9	—	—	293	9.0	—	—	252	9.8	284	4.6	—	—	241	2.7	—	—

Altitude (m) m. s. l.	Los Angeles, Calif. (217 m)		Medford, Oreg. (410 m)		Memphis, Tenn. (83 m)		New Orleans, La. (19 m)		Oakland, Calif. (8 m)		Oklahoma City, Okla. (402 m)		Omaha, Nebr. (306 m)		Phoenix, Ariz. (338 m)		Salt Lake City, Utah (1,294 m)		Sault Ste. Marie, Mich. (198 m)		Seattle, Wash. (14 m)		Washington, D. C. (10 m)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
Surface.....	348	0.4	186	0.4	188	0.7	97	2.0	260	0.5	140	1.0	142	0.7	89	1.6	147	2.7	24	0.2	123	1.1	320	0.9
500.....	0	0	298	0.6	216	6.4	142	4.0	246	1.8	169	4.5	205	2.4	182	0.6	—	—	171	2.3	178	0.1	344	2.3
1,000.....	360	0.2	308	1.2	229	7.0	155	4.7	344	2.8	211	9.1	246	4.5	270	2.4	—	—	229	4.7	10	1.4	314	4.2
1,500.....	7	0.7	22	0.4	231	6.5	170	3.3	3	2.0	227	8.0	256	5.5	267	2.8	154	2.7	231	3.9	340	2.3	260	4.8
2,000.....	249	0.7	7	0.8	243	5.0	161	2.4	343	2.3	243	6.9	279	5.4	236	2.8	230	1.4	244	6.5	338	2.6	277	5.8
2,500.....	211	1.7	276	2.2	237	4.0	174	1.8	191	0.2	248	5.3	291	7.4	230	3.5	272	2.6	252	8.8	329	4.5	263	6.7
3,000.....	210	2.5	266	4.4	229	4.3	117	0.7	148	1.6	291	5.6	306	7.3	218	4.3	284	4.5	257	7.2	307	4.9	251	8.3
4,000.....	187	3.4	281	5.9	—	—	325	2.6	—	—	330	5.8	293	5.8	235	6.1	291	8.9	249	3.6	343	6.6	—	—
5,000.....	214	3.3	282	6.3	—	—	—	—	—	—	—	—	—	—	252	8.4	290	11.7	—	—	—	—	—	—

RIVERS AND FLOODS

By RICHMOND T. ZOCH

[River and Flood Division, Montrose W. Hayes, in charge]

The table shows the places at which flood stages were reached during September. The overflows in the Roanoke, Wisconsin, Bourbeuse, Meramec, and Purgatoire Rivers caused slight damage; elsewhere no damage resulted.

In addition to the above floods, heavy rains near Hartford, Conn., caused the small streams to overflow, and there was considerable damage. High water broke a dam on Middle Creek in Snyder County, Pa. The entire damage for this Middle Creek flood was estimated at slightly less than \$70,000.

Table of flood stages during September 1934

[All dates are in September]

River and station	Flood stage	Above flood stages— dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Schuykill: Reading, Pa.-----	<i>Feet</i> 10	30	30	<i>Feet</i> 10.5	30
James: Columbia, Va.-----	18	17	17	19.8	17
Roanoke:					
Weldon, N. C.-----	31	{	9	10	36.9
Williamston, N. C.-----	10		18	20	34.7
Tar: Greenville, N. C.-----	12	13	27	11.0	23, 24
Neuse:		20	22	12.8	21
Neuse, N. C.-----	13	17	20	15.4	19
Smithfield, N. C.-----	12	18	21	13.5	20
Cape Fear: Elizabethtown, N. C.-----	20	18	19	22.3	19
		{	1	2	13.9
Santee: Rimini, S. C.-----	12		19	21	13.3
		27	27	12.2	27

Table of flood stages during September 1934—Continued

River and station	Flood stage	Above flood stages— dates		Drest	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
	Feet			Feet	
Wisconsin: Knowlton, Wis.	12	27	27	12.0	27
Bourbeuse: Union, Mo.	12	15	17	14.1	16
Meramec:					
Pacific, Mo.	11	15	18	17.8	17
Valley Park, Mo.	14	16	19	18.0	18
Arkansas Basin					
Purgatoire: Higbee, Colo.	4	15	15	11.0	15
North Canadian:					
Canton, Okla.	5	10	10	5.5	10
Yukon, Okla.	7	2	2	7.7	2
		10	11	7.6	10
Arkansas: Fort Lyon, Colo.	6	15	15	9.4	15

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, W. F. McDonald, in charge]

NORTH ATLANTIC OCEAN

By H. C. HUNTER

Atmospheric pressure.—The pressure averaged moderately higher than normal over most of the southeastern and northwestern parts of the North Atlantic; but considerably lower than normal in the northeastern, where Reykjavik, Iceland, was 0.22 inch below normal. Otherwise the departures of average pressure were very small.

Over the ocean no pressure reading was noted higher than that of 30.51 inches on the German liner *Bremen*, about noon of the 14th, in latitude 44° N., longitude 43° W. The lowest pressure, 28.15 inches, was encountered by the Swedish motorship *Blankaholm*, at 11 p. m., the 27th, in 57° N., 23° W.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, September 1934

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland	29.68		30.00	6, 16	29.37	24, 26
Reykjavik, Iceland	29.50	-0.22	30.15	5	28.87	26
Lerwick, Shetland Islands	29.76	-0.08	30.33	13	29.37	24
Valencia, Ireland	29.81	-0.18	30.32	12	29.45	3
Lisbon, Portugal	30.13	+0.11	30.48	1	29.97	6
Madeira	30.11	+0.09	30.44	20	30.01	8
Horta, Azores	30.15	-0.02	30.40	1	29.92	5, 27
Belle Isle, Newfoundland	30.06	+0.16	30.46	22	29.48	28
Halifax, Nova Scotia	30.20	+0.15	30.54	1	29.74	19
Nantucket	30.11	+0.03	30.49	1	29.69	18
Hatteras	30.04	-0.02	30.26	1	29.26	8
Bermuda	30.12	+0.04	30.28	9	30.04	12, 13, 17, 18
Turks Island	29.98	-0.00	30.04	9, 10, 23	29.92	12, 13
Key West	29.96	+0.02	30.12	23	29.84	7
New Orleans	30.01	+0.03	30.19	1	29.84	15

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Cyclones and gales.—During the first 10 days, storm activity affected two widely separated parts of the North Atlantic Ocean. One of these was situated between the thirtieth meridian and the Irish, English, and French coasts; the other between the American coast south of New England and the sixty-fifth meridian. On the 2d, reports of fresh to strong gales came from waters within about 500 miles southwest of Ireland, while on the same

day a Low of moderate energy was approaching the Carolinas from the southeast, to move inland and northward on the following day. After a brief interval without gales, a tropical cyclone appeared near the Bahamas, and on the 6th a whole gale (force 10) was encountered by the American steamship *Syros*, then about 100 miles northeast of Great Abaco Island. The next day a like force was noted by the American steamship *West Texas*, when approximately 170 miles south of Cape Hatteras (chart VIII).

Early on the 8th the center of this storm passed very close to Hatteras and thereafter continued to move northward and slightly eastward. The task of rescue from the burning American liner *Morro Castle*, off the New Jersey coast, was hampered by the strong winds connected with this storm; but fortunately it was practically completed before the greatest force occurred, the Sandy Hook station showing its highest velocity, 65 miles, between 8 and 9 p. m. of the 8th.

Two vessels near the coast between Cape Hatteras and Cape May encountered winds of force 12 on the 8th, in each case from a southwesterly point. The American steamer *Solana* met the greatest force about 7 a. m., near latitude 36° N., and the Dutch steamer *Amor* about 3 p. m., near 38°. Late on the 8th the storm center moved inland over southern New England and lost strength rapidly.

About this time several vessels encountered gales along the eastern portion of the steamship lanes to northern Europe; the greatest force there at this time was 10 (whole gale), met by the Dutch liner *Statendam* during the afternoon of the 9th, about 51° N., 26° W.

During the remainder of the month no storm worth mention affected the waters near the Atlantic and Gulf coasts of the United States; and the whole North Atlantic during the period from the 14th to 22d, inclusive, was almost free from gales, except that a small-area storm of marked strength (force 11) but with no particularly low barometric reading, was met about 2 p. m., on the 18th, between Bermuda and Fayal, by the American steamship *Yaka*. No report other than that from the *Yaka* has been received relating to this storm.

The final week of September included a moderate number of storm reports, nearly all these gales being met